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HealthGuard 2025:
Global Forum on Public Health & Preventive Medicine

Conference Proceeding August 28, 2025 - Kuala Lumpur, Malaysia

Preventive and Interceptive Orthodontics

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The prevalence of malocclusions represents about 98% of the general population; anyone can have some degree of malocclusion, which is considered a public health problem. On the other hand, the prevalence of malocclusions during mixed dentition and the need for orthodontic treatment is about 47% of the population. Preventive and interceptive orthodontics aim to detect and treat developing orthodontic problems early, ensuring optimal oral health and proper tooth and jaw alignment that supports both aesthetics and function. Preventive orthodontics involves measures taken to maintain the normal development of the oral cavity, supporting a natural and healthy transition to permanent dentition. The actions include regular dental checkups, oral hygiene education, dietary counselling, and fluoride applications to prevent tooth decay and maintain oral health. Interceptive orthodontics is related to local factors, including supernumerary teeth, ectopic canines, anterior crossbites, posterior crossbites, oral habits, and orthopaedic treatment of Class II Division 1, Division 2 and Class III malocclusions, among others.

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Advancing Preventive Pharmacology: Integrating Precision Medicine for Public Health Impact

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In an era of rapidly evolving healthcare challenges, the integration of preventive pharmacology and precision medicine has emerged as a transformative approach to enhancing public health outcomes globally and in India. This keynote presentation explores how personalized medicine, pharmacogenomics, and targeted therapeutics can drive disease prevention and early intervention across diverse populations.

The session highlights innovations such as AI-driven diagnostics, drug discovery, and real-world data analytics, reshaping preventive healthcare strategies worldwide. With India's rising burden of Non-Communicable Diseases (NCDs), the role of genetic profiling and cost-effective precision medicine solutions is becoming increasingly significant. The presentation will discuss India's progress in pharmacogenomics research, government healthcare policies (e.g., Ayushman Bharat), and successful public health initiatives like polio eradication and tuberculosis control programs.

Furthermore, the talk will address challenges such as ethical considerations, accessibility, and policy frameworks, emphasizing the need for global and local collaborations. By bridging the gap between pharmacology and public health, this presentation aims to provide insights into developing sustainable, patient-centric, and technology-driven healthcare models, with India positioned as a leader in affordable precision medicine.

Keywords: Preventive Pharmacology, Precision Medicine, Public Health Innovation, Pharmacogenomics, Healthcare Policy, India's Healthcare Strategy and AI in Healthcare

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Development of Respirator Fit Test Panel Representing the Population of Malaysia

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Effective respiratory protection depends critically on the proper fit of respirators to users' facial features. Existing fit test panels, such as those developed in the United States, China, and Taiwan, do not accurately represent the craniofacial dimensions of the Malaysian population, thus potentially compromising the protective efficacy of respirators used locally.

This study aimed to
(1) Evaluate the reliability and accuracy of 2D photogrammetry compared to direct anthropometric measurement;
(2) Develop a national database of head and facial morphological dimensions; and
(3) Construct population-specific facial panels for Malaysia using both bivariate and Principal Component Analysis (PCA) approaches.

A cross-sectional survey was conducted using multistage random sampling based on the National Census 2020, encompassing 3,324 participants across Malaysia. Measurements included ten key craniofacial dimensions. Findings showed that 2D photogrammetry had poor reliability for certain parameters, notably bigonial, bizygomatic, and head breadths, indicating limitations for clinical or occupational applications.

The study revealed significant craniofacial variation by sex, ethnicity, and birthplace. Compared to U.S. and Chinese populations, Malaysians exhibited notably wider interpupillary and nasal breadths but smaller bigonial and frontal widths. The resulting Malaysian bivariate and PCA facial panels demonstrated superior coverage—95.0% and 95.6%, respectively—compared to foreign panels.

This is the first nationally representative study on Malaysian facial anthropometry and has important implications for local respirator manufacturing, occupational safety, and public health preparedness, particularly in airborne infectious disease control.

Keywords: Facial Anthropometry, Respirator Fit Test Panel, Malaysia, 2d Photogrammetry, Personal Protective Equipment (PPE) and Principal Component Analysis

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Early Identification of Autism Spectrum Disorder among Children in Hargeisa, Somaliland

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Background
Autism Spectrum Disorder (ASD) isa neurodevelopmental condition marked by difficulties in social communication, repetitive behaviors, and restricted interests. Early identification of autism is vital, as research consistently shows that early intervention.

Which is to manifests in early childhood, with subtle signs often observable between 12 to 18 months of age. These signs can include delayed speech development, lack of eye contac limited social engagement, and repetitive behaviors. Research suggests that early Intervention-before the age of 3-can positively impact cognitive, language, and adaptive skills, providing a foundation of better living and integration into school and society.

The growing recognition of autism has led to widespread efforts in screening and public awareness campaigns

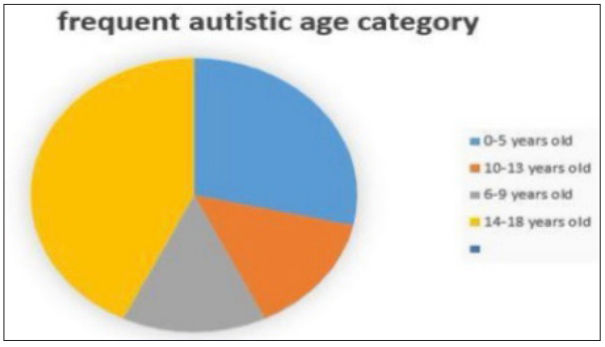
Research Aim and Questions
Aim
The aim of this research is to explore and evaluate the effectiveness of early identification strategies for Autism Spectrum Disorder (ASD) in children, with a focus on recognizing early behavioral, social, and communication signs before the age of 3. The study seeks to assess the reliability of existing diagnostic tools, the role of parental and healthcare provider observations, and the impact of early detection on intervention outcomes. Additionally, it aims to identify barriers to early diagnosis in diverse populations and propose methods to enhance early screening and intervention efforts.

Research Questions
To determine the level of knowledge among mothers towards their own children and to improve the accuracy and timeliness of diagnosing autism disorder spectrum (ASD) and exploring How do healthcare access, cultural beliefs, and socioeconomic factors affect the early identification of autism.

Methodology
A qualitative interview study research design was conducted, involving the collecti Mothers who have one specific autistic child and also mothers who have more than one autistic Child and still in a denial situation.

This study was also collected from autistic school centers in Depth interview.
This study site was chosen at autistic schools centers at Hargeisa, Somaliland and the site was chosen for several reasons:

- The selection of autistics school centers as the site for this study is based on its relevance to the Research topic, accessibility, availability of participants, ethical considerations, community Engagement, and alignment with the literature by conducting the study in autistic school centers, the research aims to generate meaningful and contextually grounded findings that contribute to knowledge advancement in the field.



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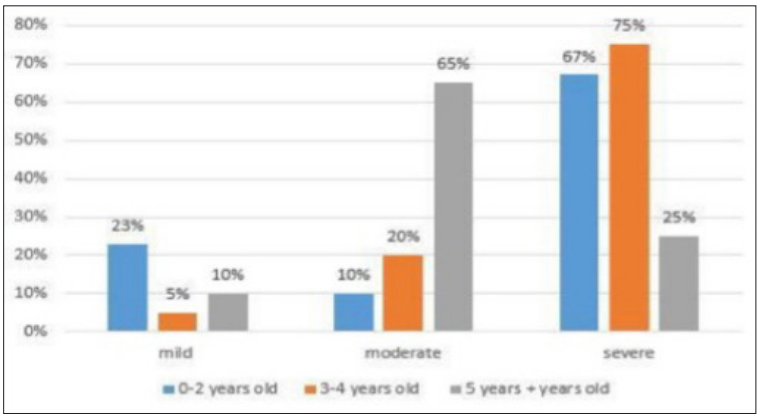
- This charts interprets that the most frequent age category is the 14-18 years due to the delayed diagnosis and identification is apparently seen
- 6-9 and 10-13 years are closely age years which can b characterized as same
- Despite the fact, 0-5 years ages are accurate age to diagnose yet our community doesn't release it much to characterize it as autism



- The findings shows that parents who have autistics children are eally hard for them to accept the fact that their children are actually suffering from autism spectrum disorder (ASD) or most of them in a denial situation.
- major challenges identified in this research is parental denial or delay in recognizing the early signs of autism
- neighbors are keeping away their children from the autistic children on the playground, resulting where parents of the autistic children feeling guilty or in shame position

Conclusion

This study highlights the importance of timely diagnosis and intervention during the early years, emphasizing that children who receive early support are more likely to develop essential social, communication, and adaptive skills.

Also this study demonstrates that integrating multiple behavior and biological markers improves the accuracy of diagnosing autism among children under three years old

There is still a need for comprehensive efforts to educate parents, reduce stigma, and address disparities in access to care. By focusing on early diagnosis and intervention, we can ensure that children with austim receive the support they need to reach their full potential.

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HealthGuard 2025:
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Autism & Medical Health – How Different Individuals are Impacted (My Story)

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Statement of the Problem: Autistic women in Health care and how they cope with the noise of other patients, lights/sensory/ overload/people in ED depts or wards of hospitals.

I'll be presenting on how I've had to cope in the past with being in hospital and being in an ED department where I was during COVID 19. I'll also be explaining how I've had a towel put over my eyes to shade me from all of the bright lights as well as coping with all of the medical staff attending to me at the time, and the difficulties that I faced during those times.

The strategies I'll be discussing are that I've had to take myself to learning to cope with this environment over my lifetime, as well as speaking up and tell others that I'm autistic as well as being unable to see without my glasses going into surgery to transfer from bed to operating table.

I'll also be speaking about how I was not able to discern feelings of being "sick" as I've had to learn about them as well as now I've got the capacity of going to the doctors myself should I feel unwell and uncomfortable within myself so that I am able to take care of myself.

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Keeping People in Rhythm Electronically – An Overview of Cardiac Rhythm Management Devices

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Core Concept: Use of outside energy to stimulate the heart – for pacing and defibrillation.

The history of cardiac rhythm devices reflects a remarkable evolution in cardiovascular medicine, driven by technological innovation and a deepening understanding of electrophysiology. The journey began in the 1950s with the invention of the first implantable pacemaker, a groundbreaking solution for bradyarrhythmias. Over the decades, Cardiac Rhythm Management (CRM) devices have expanded to include Implantable Cardioverter-Defibrillators (ICDs), Cardiac Resynchronization Therapy (CRT) devices, and leadless pacemakers. These advancements have been fueled by improvements in battery life, miniaturization, telemetry, and device programming. Modern devices not only correct life-threatening arrhythmias but also provide real-time diagnostics and remote monitoring capabilities. This overview traces the historical milestones and technological advancements that have shaped cardiac rhythm devices, highlighting their growing role in improving patient outcomes and quality of life in those with heart rhythm disorders.